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EXAMINER	
NG, CHRISTINE Y	
ART UNIT	**PAPER NUMBER**
2663	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/880,600	Applicant(s) ROBERTS, LAWRENCE G.	
	Examiner Christine Ng	**Art Unit** 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *137-154* is/are allowed.

6)☒ Claim(s) *See Continuation Sheet* is/are rejected.

7)☒ Claim(s) *23,25,26,35,37,38,59,61,62,71,73,74,163,165,166,177,179 and 180* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 1-4,7,9-17,19-28,30-40,42-52,54-64,66-76,78-83,85,87-89,91,93-95,97,99-101,103 and 137-182.

Continuation of Disposition of Claims: Claims rejected are 1-4,7,9-17,19-22,24,27,28,30-34,36,39,40,42-52,54-58,60,63,64,66-70,72,75,76,78-83,85,87-89,91,93-95,97,99-101,103,155-162,164,167-176,178,181 and 182.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 10-17, 20-22, 24, 27, 28, 31, 33, 34, 36, 39, 40, 43, 45-52, 55-58, 60, 63, 64, 67-70, 72, 75, 76, 79-83, 87-89, 93-95 and 99-101 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,272,107 to Rochberger et al in view of U.S. Patent No. 6,034,958 to Wicklund.

Referring to claims 1, 11, 81 and 87, Rochberger et al disclose in Figure 22 a method for recovering from a failure, comprising:

Sending a first set of information (data 380) from an ingress module (source node) to an egress module (destination node) via a first route (transit nodes #1,#2). Refer to Column 18, lines 19-21.

Detecting a failure (break 384) in said first route (transit nodes #1,#2). Refer to Column 18, lines 19-21.

In response to said failure (break 384), directing a message (restore_loopback 386) to said ingress module (source node) informing said ingress module (source node) of said failure (break 384). Refer to Column 18, lines 21-24.

In response to said message (restore_loopback 386), sending a future set of information (data 402) from said ingress module (source node) to said egress module (destination node) via an alternate route (transit node #3,#4). Refer to Column 18, lines 24-37.

Wherein directing said message to said source comprises:

Identifying said source (source node).

Accessing a routing table (not disclosed) which comprises one or more (one) routes (VPI/VCI) to said source. "The end nodes know which paths are involved as they receive the restore_loopback cell over a particular VPI/VCI" (Column 16, lines 62-64).

Obtaining a return route from said routing table (not disclosed).

Sending said message (restore_loopback 386) to said source via said return route. The steps can be seen to be performed within a router and by a router since the router contains the hardware circuitry to perform these steps. Refer to Column 16, lines 37-65.

Rochberger et al do not specifically disclose that the return paths are stored in routing tables.

However, since "the end nodes know which paths are involved as they receive the restore_loopback cell over a particular VPI/VCI", the end nodes must have received the restore_loopback cell over a particular VPI/VCI that was stored and pre-established. Furthermore, Wicklund discloses in Figure 1 that an ATM switch includes a routing table 100 to route an ATM cell 10 to a switch output port, and also obtains new VPI/VCI fields from the routing table to substitute into cell header 10 for use by the next segment of the

ATM network 20. This information is determined based on the incoming cells' VPI/VCI fields. So, nodes can hold routing tables that dictate VPI/VCI paths for ATM cells to traverse through the network. Refer to Column 1, lines 46-60 and Column 3, lines 39-56. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the return paths are stored in routing tables, the motivation being so that the node detecting the failure can refer to the table to quickly determine the return path and inform the source node of the route failure.

Referring to claims 2, 14 and 49, Rochberger et al disclose in Figure 22 that in response to said message (restore_loopback 386), preventing other sets of information from being sent from said ingress module (source node) to said egress module (destination node) via said first route (transit nodes #1,#2). In response to the restore_loopback 386 signal, "the end nodes begin storing the incoming cells in the buffer and they stop transmitting cells onto the broken path" (Column 18, lines 24-26).

Referring to claims 3, 16 and 51, Rochberger et al disclose in Figure 22 that the said first set of information (data 380) comprises a data portion, and wherein in response to said message (restore_loopback 386), resending at least said data portion of said first set of information (data 380) from said ingress module (source node) to said egress module (destination node) via said alternate route (transit nodes #3,#4). The cells looped back from the broken path in response to the restore_loopback 386 signal are sent to the destination over the redundant path instead. Refer to Column 18, lines 24-28.

Referring to claims 4 and 17, Rochberger et al disclose that said message (restore_loopback 386) comprises said data portion (data 380) such that said data portion (data 380) is returned to said ingress module (source node). Refer to Column 17, lines 53-56 and Column 18, lines 21-26.

Referring to claim 10, Rochberger et al disclose that the method in implemented within a router of said network. The router is formed by the source node, transit nodes #1,#2,#3,#4 and the destination node. Refer to Column 10, lines 2-11.

Referring to claims 12 and 47, Rochberger et al disclose in Figure 5 that said first route (transits node #1,#2) and said alternate route (transits node #3,#4) are predetermined and stored within a second routing table (switching table). Refer to Column 10, lines 47-59 and Column 18, lines 51-57.

Referring to claims 13 and 48, Rochberger et al disclose in Figure 5 that sending said future set of information (data 380) comprises selecting said alternate route (transit nodes #3,#4) from said second routing table (switching table). Refer to Column 10, lines 47-59 and Column 18, lines 51-57.

Referring to claims 15 and 50, Rochberger et al disclose in Figure 5 that said first route (transit node #1,#2) and said alternate route (transit node #3,#4) are predetermined and stored within a second routing table (switching table), and wherein preventing comprises, replacing said first route (transit nodes #1,#2) with said alternate route (transit nodes #3,#4) in said second routing table (switching table). Previous redundant paths in the switching table are marked as active. Refer to Column 10, lines 47-59 and Column 18, lines 51-57.

Referring to claim 20, Rochberger et al disclose in Figure 18 that said ingress module (source node) comprises an ingress line card (port interface 320), and said egress module (destination node) comprises an egress line card (port interface 320). Refer to Column 16, lines 38-44.

Referring to claims 21 and 33, Rochberger et al disclose in Figure 22 a method, implemented within a router of a network, for recovering from a failure, comprising:

Sending a first set of information (data 380) from an ingress module (source node) to a first egress module (transit node #1) for forwarding by said first egress module (transit node #1) to a destination (destination user) external to said router.

Detecting a failure of [claim 21] said first egress module (transit node #1) or [claim 33] beyond said first egress module (transit node #1). The failure can occur in a transit node or a line (break 384) after the transit node. Refer to Column 15, lines 55-56.

In response to said failure of said first egress module (transit node #1), directing a message (restore_loopback 386) to said ingress module (source node) informing said ingress module (source node) of said first egress module failure (transit node #1). Refer to Column 18, lines 19-21.

In response to said message (restore_loopback 386), selecting an alternate egress module (transit node #3) capable of forwarding information to said destination (destination user). Refer to Column 18, lines 21-37 and lines 51-57.

Sending a future set of information (data 402) from said ingress module (source node) to said alternate egress module (transit node #3) for forwarding to said destination (destination user). Refer to Column 18, lines 21-37 and lines 51-57.

Rochberger et al also discloses wherein directing said message to said ingress module comprises: identifying said ingress module; accessing a routing table (not disclosed) which comprises one or more routes to said ingress module; obtaining a return route from said routing table (not disclosed); and sending said message to said ingress module via said return route. Refer to the rejection of claims 1, 11, 81 and 87.

Referring to claims 22 and 34, Rochberger et al disclose in Figure 22 that the said first set of information (data 380) and said future set of information (data 402) are both part of a flow, and wherein said method further comprises: in response to said message (restore_loopback 386), preventing other sets of information associated with said flow from being sent from said ingress module (source node) to said first egress module (transit node #1). Refer to Column 18, lines 19-37.

Referring to claims 24 and 36, Rochberger et al disclose in Figure 22 that said first set of information (data 380) and said future set of information (data 402) are both part of a flow, and wherein said method further comprises: in response to said message (restore_loopback 386), causing other sets of information associated with said flow to be sent from said ingress module (source node) to said alternate egress module (transit node #3). Refer to Column 18, lines 19-37.

Referring to claims 27 and 39, Rochberger et al disclose in Figure 22 that said first set of information (data 380) comprises a data portion, and wherein said method further comprises: in response to said message (restore_loopback 386), resending at least said data portion of said first set of information (data 380) from said ingress module (source node) to said alternate egress module (transit node #3) for forwarding

to said destination (destination user). The cells looped back from the broken path in response to the restore_loopback 386 signal are sent to the destination over the redundant path instead. Refer to Column 18, lines 24-28.

Referring to claims 28 and 40, Rochberger et al disclose in Figure 22 that said message (restore_loopback 386) comprises said data portion such that said data portion is returned to said ingress module (source node). The restore_loopback 386 signal with data is returned to the source node. Refer to Column 17, lines 53-56 and Column 18, lines 21-26.

Referring to claims 31 and 43, Rochberger et al disclose in Figure 18 that said ingress module (source node) comprises an ingress line card (port interface 320) and in Figure 17 said first egress module (transit node #1) comprises an first egress line card (input port 316), and said alternate egress module (transit node #3) comprises a second egress line card (input port 316). Refer to Column 16, lines 21-44.

Referring to claim 45, Rochberger et al disclose in Figure 22 that the said external failure (break 384) precludes said first egress module (transit node #1) from forwarding said first set of information (data 380) to said destination (destination user). Refer to Column 16, lines 18-20.

Referring to claim 46, Rochberger et al disclose in Figure 22 a router comprising:

An ingress module (source node).

An egress module (destination node).

A forwarding mechanism (transit nodes #1,#2,#3,#4) for forwarding information between said ingress module (source node) and said egress module (destination node).

Wherein said ingress module (source node) sends a first set of information (data 380) to said forwarding mechanism (transit nodes #1,#2,#3,#4) to be forwarded to said egress module (destination node) via a first route (transit nodes #1,#2), said forwarding mechanism (transit nodes #1,#2,#3,#4) detecting a failure (break 384) in said first route (transit nodes #1,#2), and in response to said failure (break 384), said forwarding mechanism (transit node #1,#2,#3,#4) directing a message (restore_loopback 386) to said ingress module (source node) informing said ingress module (source node) of said failure (break 384), and in response to said message (restore_loopback 386), said ingress module (source node) sending a future set of information (data 402) to said forwarding mechanism (transit nodes #1,#2,#3,#4) to be forwarded to said egress module (destination node) via an alternate route (transit nodes #3,#4). Refer to the rejection of claims 1, 11, 81 and 87.

Rochberger et al also discloses wherein directing said message to said ingress module comprises: identifying said ingress module; accessing a routing table (not disclosed) which comprises one or more routes to said ingress module; obtaining a return route from said routing table (not disclosed); and sending said message to said ingress module via said return route. Refer to the rejection of claims 1, 11, 81 and 87.

Referring to claim 52, Rochberger et al disclose in Figure 22 that the said forwarding mechanism (transit nodes #1,#2,#3,#4) includes said data portion (data 380) in said message (restore_loopback) such that said data portion (data 380) is returned by said forwarding mechanism (transit nodes #1,#2,#3,#4) to said ingress module (source node). The cells looped back from the broken path in response to the

restore_loopback 386 signal are sent to the destination over the redundant path instead. Refer to Column 18, lines 24-28.

Referring to claim 55, Rochberger et al disclose in Figure 18 that the ingress module (source node) comprises an ingress line card (port interface 320) and said egress module (destination node) comprises an egress line card (port interface 320) and in Figure 17 that said forwarding mechanism (transit node #1,#2,#3,#4) comprises a switching fabric (switching fabric 312). Refer to Column 10, lines 2-11 and Column 16, lines 21-44.

Referring to claim 56, Rochberger et al disclose in Figure 18 that the switching fabric (switching fabric 312) comprises a fabric card. The switching fabric performs switching of cells from the primary to the alternative route. Refer to Column 10, lines 2-11 and Column 16, lines 21-44.

Referring to claim 57, Rochberger et al disclose in Figure 22 a router, comprising:

An ingress module (source node).

A first egress module (transit node #1).

An alternate egress module (transit node #3).

A forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) for forwarding information between said ingress module (source node), said first egress module (transit node #1), and said alternate egress module (transit node #3).

Wherein said ingress module (source node) sends a first set of information (data 380) to said forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) to

be forwarded to said first egress module (transit node #1), said first set of information (data 380) intended to be forwarded by first egress module (transit node #1) to a destination (destination user) external to said router, said forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) detecting a failure (transit node #1 failure) which precludes forwarding of said first set of information (data 380) to said first egress module (transit node #1), and in response to said failure (transit node #1 failure), said forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) directing a message (restore_loopback 386) to said ingress module (source node) informing said ingress module (source node) of said failure (transit node #1 failure), and based upon said message (restore_loopback 386), said ingress module (source node) determining that said first egress module (transit node #1) has failed, and in response to said message (restore_loopback 386), said ingress module (source node) selecting said alternate egress module (transit node #3) and sending a future set of information (data 402) to said forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) to be forwarded to said alternate egress module (transit node #3), said future set of information (data 402) intended to be forwarded by said alternate egress module (transit node #3 or #4) to said destination (destination user). PNNI and Q.SAAL signaling can be used to support failure detection and alternate routing when a failure occurs. Refer to the rejection of claims 21 and 33; Column 2, lines 12-28; Column 4, lines 28-37 and Column 12, lines 44-48.

Rochberger et al also discloses wherein directing said message to said ingress module comprises: identifying said ingress module; accessing a routing table (not

disclosed) which comprises one or more routes to said ingress module; obtaining a return route from said routing table (not disclosed); and sending said message to said ingress module via said return route. Refer to the rejection of claims 1, 11, 81 and 87.

Referring to claims 58 and 70, Rochberger et al disclose in Figure 22 that said first set of information (data 380) and said future set of information (data 402) are both part of a flow, and wherein said ingress module (source node), in response to said message (restore_loopback 386), prevents other sets of information associated with said flow from being sent from said ingress module (source node) to said first egress module (transit node #1). Refer to Column 18, lines 19-37 and lines 51-57.

Referring to claims 60 and 72, Rochberger et al disclose in Figure 22 that said first set of information (data 380) and said future set of information (data 402) are both part of a flow, and wherein said ingress module (source node) in response to said message (restore_loopback 386) causes said other said sets of information associate with said flow to be sent from said ingress module (source node) to said alternate egress module (transit node #3) via said forwarding mechanism. Refer to Column 18, lines 19-37 and lines 51-57.

Referring to claims 63 and 75, Rochberger et al disclose in Figure 22 that the first set of information comprises a data portion, and wherein said ingress module (source node), in response to said message (restore_loopback 386), resends at least said data portion of said first set of information (data 380) to said forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) to be forwarded to said alternate egress module (transit node #3) for forwarding to destination (destination user). The cells

looped back from the broken path in response to the restore_loopback 386 signal are sent to the destination over the redundant path instead. Refer to Column 18, lines 24-28.

Referring to claims 64 and 76, Rochberger et al disclose in Figure 22 that said forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) includes said data portion in said message (restore_loopback 386) such that said data portion is returned by said forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) to said ingress module (source node). The cells looped back from the broken path in response to the restore_loopback 386 signal are sent to the destination over the redundant path instead. Refer to Column 17, lines 53-56 Column 18, lines 19-37.

Referring to claims 67 and 79, refer to the rejection of claim 55.

Referring to claims 68 and 80, refer to the rejection of claim 56.

Referring to claim 69, Rochberger et al disclose in Figure 22 a router, comprising:

An ingress module (source node).

A first egress module (transit node #1).

An alternate egress module (transit node #3).

A forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) for forwarding information between said ingress module (source node), said first egress module (transit node #1), and said alternate egress module (transit node #3).

Wherein said ingress module (source node) sends a first set of information (data 380) to said forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) to

be forwarded to said first egress module (transit node #1), said first set of information (data 380) intended to be forwarded by first egress module (transit node #1) to a destination (destination user) external to said router, said first egress module (transit node #1) detecting a failure (transit node #1 failure) which precludes forwarding of said first set of information (data 380) to said first egress module (transit node #1), and in response to said failure (transit node #1 failure), said forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) directing a message (restore_loopback 386) to said ingress module (source node) informing said ingress module (source node) of said failure (transit node #1 failure), and based upon said message (restore_loopback 386), said ingress module (source node) determining that said first egress module (transit node #1) has failed, and in response to said message (restore_loopback 386), said ingress module (source node) selecting said alternate egress module (transit node #3) and sending a future set of information (data 402) to said forwarding mechanism (PNNI links between transit nodes #1,#2,#3,#4) to be forwarded to said alternate egress module (transit node #3), said future set of information (data 402) intended to be forwarded by said alternate egress module (transit node #3) to said destination (destination user). The failure is detected by hardware in transit node #1. Refer to the rejection of claims 21 and 33; Column 2, lines 12-28; Column 12, lines 44-48.

Rochberger et al also discloses wherein directing said message to said ingress module comprises: identifying said ingress module; accessing a routing table (not disclosed) which comprises one or more routes to said ingress module; obtaining a

return route from said routing table (not disclosed); and sending said message to said ingress module via said return route. Refer to the rejection of claims 1, 11, 81 and 87.

Referring to claim 82, Rochberger et al disclose in Figure 22 that the said set of information (data 380) comprises a data portion, and wherein directing said message (restore_loopback 386) to said ingress module (source node) comprises returning said data portion to said ingress module (source node). Refer to Column 18, lines 19-28.

Referring to claims 83, 89, 95 and 101, Rochberger et al disclose in Figure 22 that the said set of information (data 380) comprises a data portion and wherein directing said message (restore_loopback 386) to said ingress module (source node) comprises including said data portion in said message (restore_loopback 386) such that said data portion is returned to said ingress module (source node). Data is sent back with the restore_loopback signal 386. Refer to Column 18, lines 19-28.

Referring to claims 88, 94 and 100, Rochberger et al disclose in Figure 22 that said first set of information (data 380) comprises a data portion, and wherein the mechanism for directing said message (restore_loopback 386) to said ingress module (source node) comprises a mechanism for returning said data portion (data 380) to said ingress module (source node). Refer to Column 18, lines 19-28.

Referring to claims 93 and 99, Rochberger et al disclose in Figure 22 a method comprising:

Receiving a set of information (data 380) sent by an ingress module (source node) intended to be forwarded by said egress module (destination node) to a destination (destination user) external to the router.

Detecting a failure (break 384) external to the router which precludes said egress module (destination node) from forwarding said set of information (data 380) to said destination (destination user).

In response to said failure (break 384), directing a message (restore_loopback 386) to said ingress module (source node) informing said ingress module (source node) of said failure (break 384). Refer to the rejection of claims 1, 11, 81 and 87.

Rochberger et al also discloses wherein directing said message to said ingress module comprises: identifying said ingress module; accessing a routing table (not disclosed) which comprises one or more routes to said ingress module; obtaining a return route from said routing table (not disclosed); and sending said message to said ingress module via said return route. Refer to the rejection of claims 1, 11, 81 and 87.

3. Claims 7, 19, 30, 42, 54, 66, 78, 85, 91, 97 and 103 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,272,107 to Rochberger et al in view of U.S. Patent No. 6,034,958 to Wicklund, and in further view of U.S. Patent No. 6,167,025 to Hsing et al.

Rochberger et al do not disclose that identifying said ingress module comprises extracting from said first set of information an identifier which identifies said ingress module.

Hsing et al disclose in Figure 18B a re-route setup message 1802 that includes a source switch identifier which identifies the source switch. The system utilizes the source switch identifier to identify the source switch to which to send a crank-back message so the source switch can find an alternate route for the message. Refer to

Column 15, lines 6-20 and Column 24, lines 1-60. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that identifying said ingress module comprises extracting from said first set of information an identifier which identifies said ingress module, the motivation being so that the system can recognize the source switch and send the data back to the switch to be sent on to a different route.

4. Claims 9, 32 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,272,107 to Rochberger et al in view of U.S. Patent No. 6,034,958 to Wicklund, and in further view of U.S. Patent No. 6,560,654 to Fedyk et al.

Rochberger et al do not disclose that the method is implemented on a routing layer of a network.

Fedyk et al disclose that the routing is performed on layer three, or the routing layer, of the network. Layer three provides switching the routing technologies for transmitting data from node to node, and provides functions such as routing and forwarding. Refer to Column 1, lines 15-33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that that the method is implemented on a routing layer of a network, the motivation being that layer three provides routing functions for data transmission among nodes of a network.

5. Claims 155-162, 164, 167-176, 178, 181 and 182 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,272,107 to Rochberger et al.

Referring to claims 155 and 169, refer to the rejection of claim 11.

Rochberger et al do not specifically apply the method to a router with an ingress

module, an egress module and a switching fabric internal to the router. However, as shown in Figure 17, a transit node consists of an ingress module (port 310), an egress module (port 316) and a switching fabric 312 internal to the router. Also, as shown in Figure 18, a source node consist of an ingress module (port 320), an egress module (ports 324,328) and a switching fabric 322. All the interactions involving sending a first set of information to the egress module via a first route, receiving a message indicating failure in the first route, and sending a future set of information to the egress module via an alternate route occur within the source node. The steps can be seen to be performed within a router and by a router since the router contains the hardware circuitry to perform these steps. Refer to Column 16, lines 37-65.

Referring to claims 156 and 170, refer to the rejection of claims 12 and 13.

Referring to claims 157 and 171, refer to the rejection of claim 14.

Referring to claims 158 and 172, refer to the rejection of claim 15.

Referring to claims 159 and 173, refer to the rejection of claim 16.

Referring to claims 160 and 174, refer to the rejection of claim 17.

Referring to claims 161 and 175, refer to the rejection of claim 21.

Rochberger et al do not specifically apply the method to a router with an ingress module, an egress module and a switching fabric internal to the router. However, as shown in Figure 17, a transit node consists of an ingress module (port 310), an egress module (port 316) and a switching fabric 312 internal to the router. Also, as shown in Figure 18, a source node consist of an ingress module (port 320), an egress module (ports 324,328) and a switching fabric 322. All the interactions involving sending a first

set of information to the first egress module, receiving a message that the first egress module failed, selecting an alternate egress module, and sending a future set of information to the alternate egress module occur within the source node. The steps can be seen to be performed within a router and by a router since the router contains the hardware circuitry to perform these steps. Refer to Column 16, lines 37-65.

Referring to claims 162 and 176, refer to the rejection of claim 22.

Referring to claims 164 and 178, refer to the rejection of claim 24.

Referring to claims 167 and 181, refer to the rejection of claim 27.

Referring to claims 168 and 182, refer to the rejection of claim 28.

Allowable Subject Matter

6. Claims 137-154 are allowed.

7. Claims 23, 25, 26, 35, 37, 38, 59, 61, 62, 71, 73, 74, 163, 165, 166, 177, 179 and 180 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments filed October 7, 2005 have been fully considered but they are not persuasive.

Referring to the argument of independent claims 1, 11, 21, 33, 46, 57, 69, 81, 87, 93 and 99 that Rochberger et al do not disclose the step of identifying the source (page 48, line 20 to page 50, line 12), refer to Figures 5 and 22. As shown in Figure 5, each node comprises a switching table indicating the primary and redundant VPI/VCI paths.

Refer to Column 10, lines 50-59. The ends nodes receive the LOOPBACK message over a particular VPI/VCI, and the VPI/VCI identifies the source. Refer to Column 16, lines 56-65. In ATM, the VPI consists of several VCI's, each VCI designating a different source. So, the node must identify the proper source to which the send the LOOPBACK message using the VPI/VCI. The VPI/VCI is used to identify the source, since each VPI/VCI designates a different source. Even though Figure 17 shows that the node sends special cells to the same port from which the data cell was received, the messages still include a VPI/VCI pair to identify the source.

Referring to independent claims 11, 21, 33, 46, 57, 69, 81, 87, 93, 99, 155, 161, 169 and 175 that Rochberger et al do not specifically disclose a router with an ingress module, an egress module and a switching fabric internal to the router (page 52, line 15 to page 53, line 5), refer to Figures 17 and 18. Rochberger et al do not specifically apply the method to a router with an ingress module, an egress module and a switching fabric internal to the router. However, as shown in Figure 17, a transit node consists of an ingress module (port 310), an egress module (port 316) and a switching fabric 312 internal to the router. Also, as shown in Figure 18, a source node consist of an ingress module (port 320), an egress module (ports 324,328) and a switching fabric 322. All the interactions involving sending a first set of information to the egress module via a first route, receiving a message indicating failure in the first route, and sending a future set of information to the egress module via an alternate route occur within the source node. Additionally, all the interactions involving sending a first set of information to the first egress module, receiving a message that the first egress module failed, selecting an

alternate egress module, and sending a future set of information to the alternate egress module occur within the source node. The steps can be seen to be performed within a router and by a router since the router contains the hardware circuitry to perform these steps. Refer to Column 16, lines 37-65.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng CN
December 15, 2005

Ricky Ngo
RICKY Q. NGO
SUPERVISORY PATENT EXAMINER